#### WorkKeys/MEAP/CTE - Michigan Academic Standards Crosswalk

This project was a collaborative effort between the Michigan Department of Career Development, Office of Career and Technical Preparation, and identified state level experts, professional organizations, and content area teachers in response to requests from administrators and educators. Each crosswalk was developed to the Standards level of the Michigan Curriculum Frameworks. For further development, local district CTE programs will need to do benchmark level linkage with their local curriculum.

As we move forward in the educational process to prepare students for their future, we must recognize our responsibility to provide high quality technical and academic education to best prepare these students for their future goals.

#### Overview:

- This is a tool to assist Local Educational Agencies to develop crosswalks at the benchmark level for specific programs.
- CTE curriculum Standards /unit goals were the basis of the crosswalk
- Local district programs need to do benchmark level linkage with their local curriculum.
- Curriculum Standards support the curriculum, with a broad-based focus.
- WorkKeys crosswalks used national occupational job profile information as the basis of determining performance level expectations.
- For new program application submission starting 2003-2004, crosswalk at the benchmark level will be required.

#### Benefits

- Provides linkages to National Occupational Standards for improvement in program delivery
- Will assist "highly qualified" instructional staff in documenting accountability and supporting new national initiatives
- Demonstrate CTE support of the Michigan Curriculum Frameworks and MEAP objectives
- To enable districts with CTE programs to strengthen communication with curriculum directors, superintendents and building administrators.
- Curriculum crosswalk will encourage communications between Career and Technical and academic educators
- Assist locals in establishing support for academic credit granted for Career and Technical Education programs

#### Plan Dissemination

- On MDCD/OCTP Web site
  - o Posted by pathway
  - o Link to Agriscience Web site
- State update meetings
- Presentation to Teacher groups
- Presentations to Administrator groups
- Distribution to Teacher Educators
- Feature item in Newsletters, updates to field
- MDE
- Available to Education Institutions

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			culum Frameworks		
	(As A	(As Assessed by the Michigan Educational Assessment Program –MEAP)			
Program Area					
Standards	Science Strands	<b>Mathematics Content</b>	English Language Arts	Social Studies Strands	
<b>Identification Here</b>		Standards	Standards		
1) Students will	Strand 1: Constructing	1.1 Students recognize	1. All students will demonstrate	1. Students use knowledge of	
analyze	New Scientific Knowledge	similarities and generalize	the ability to read and	the past to construct meaningful	
interrelationships		patterns, use patterns to create	comprehend general and	understanding of our diverse	
between natural	1.1 All students will ask	models and make predictions,	technical materials.	cultural heritage and to inform	
resources and	questions that help them	describe the nature of patterns		their civic judgments.	
Michigan	learn about the world;	and relationships and construct	2. All students will demonstrate		
agricultural	design and conduct	representations of mathematical	the ability to write clear and	2. Students will use knowledge	
production, foster	investigations using	relationships.	grammatically correct sentences,	of spatial patterns on earth to	
natural resource	appropriate methodology		paragraphs, and compositions.	understand processes that shape	
conservation and	and technology, learn from	1.2 Students describe the		human environments and to	
maximize the reuse	books and other sources of	relationships among variables,		make decisions about society.	
of recoverable	information; communicate	predict what will happen to one	3. All students will focus on		
resources.	their findings using	variable as another variable is	meaning and communication as	3. Students will use knowledge	
	appropriate technology and	changed, analyze natural	they listen, speak, view, read and	of American government and	
	reconstruct previously	variation and sources of	write in personal, social,	politics to make informed	
	learned knowledge.	variability to compare patterns	occupational and Civic contexts.	decisions about government	
		of change		and their communities.	
	Strand 2: Reflecting on		4. All students will use the		
	Scientific Knowledge	3.1 Students will collect and	English language effectively.	4. Students will use knowledge	
		explore data, organize data into a		of the production, distribution	
	2.1 All students will	useful form, and develop skill in	5. All students will read and	and consumption of goods and	
	analyze claims for their	representing and reading data	analyze a wide variety of classic	services to make personal and	
	scientific merit and explain	displayed in different forms.	and contemporary literature and	societal decisions about the use	
	how scientists decide what		other texts to seek information,	of scarce resources.	

### **Strand 3:** <u>Using scientific</u> knowledge in Life Science.

- 3.2 All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions.
- 3.3 All students will investigate the explain how characteristics of living things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits

- 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.
- 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.
- 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations.
- 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction,

- ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

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can be established by	iteration, and algorithm design	-   -	
changing or manipula	ting	across texts.	
genes.			
		10. All students will apply	
3.4 All students will e	xplain	knowledge, ideas, and issues	
how scientists constru	ct and	drawn from text to their lives	
scientifically test theo	ries	and the lives of others.	
concerning the origin			
and evolution of speci		11. All students will define and	
compare ways that liv	· ·	investigate important issues and	
organisms are adapted		problems using a variety of	
(suited) to survive and		resources, including technology	
reproduce in their		to explore and create texts	
environments and ana	lyze	to exprore and create texts	
how species change the		12. All students will develop	
time.	nough	and apply personal, shared, and	
time.		academic criteria for the	
3.5 All students will e	vnlain	employment, appreciation, and	
how parts of an ecosy		evaluation of their own and	
are related and how the		other' oral, written, and visual	
interact; explain how	icy	texts.	
energy is distributed t		texts.	
living things in an	0		
	and		
ecosystem; investigate			
explain how commun			
of living things chang			
a period of time; desc	ribe		
how materials cycle	,		
through an ecosystem	and		
get reused in the			
environment and anal	yze		
how human and			
environments interact			

Strand 4: <u>Using Scientific</u> <u>knowledge in Physical</u> <u>Science:</u>		
4.1 All students will measure and describe the things around us; explain what the world around us is made of; identify and describe forms of energy; and explain how electricity and magnetism interact with matter		
4.2 All students will investigate, describe and analyze ways in which matter changes; describe how living things and human technology change matter and transform energy; explain how visible changes in matter are related to atoms and molecules; and how changes in matter are related to changes in energy.		

Strand 5: 1 knowledge Science.	Using Scientific in Earth	
describe and the earth's f over time; a	e earth's surface; d explain how eatures change nd analyze chnology on the	
found on ea characterist how water r analyze the	where water is rth; describe the ics of water and moves; and interaction of rities with the	

#### Michigan Curriculum Frameworks (As Assessed by the Michigan Educational Assessment Program –MEAP) Program Area **Standards Science Strands Mathematics Content English Language Arts Social Studies Strands Identification Here** Standards Standards 2) Students shall **Strand 1:** Constructing 1.1 Students recognize 1. All students will demonstrate 1. Students use knowledge of the past to construct meaningful understand the New Scientific Knowledge similarities and generalize the ability to read and patterns, use patterns to create comprehend general and understanding of our diverse economic importance 1.1 All students will ask technical materials. of the agricultural models and make predictions, cultural heritage and to inform their civic judgments. describe the nature of patterns and natural resources questions that help them sectors in Michigan, learn about the world; and relationships and construct 2. All students will demonstrate the nation, and the design and conduct representations of mathematical the ability to write clear and investigations using 3. Students will use knowledge world. Students shall relationships. grammatically correct sentences, appropriate methodology paragraphs, and compositions. of American government and appreciate the importance of and technology, learn from 1.2 Students describe the politics to make informed decisions about government supervised books and other sources of relationships among variables, predict what will happen to one experience programs information: communicate 3. All students will focus on and their communities. in the total their findings using variable as another variable is meaning and communication as appropriate technology and changed, analyze natural agricultural they listen, speak, view, read and 4. Students will use knowledge reconstruct previously variation and sources of education program. write in personal, social, of the production, distribution learned knowledge. variability to compare patterns occupational and Civic contexts. and consumption of goods and services to make personal and of change. 4. All students will use the societal decisions about the use 3.1 Students will collect and English language effectively. of scarce resources. explore data, organize data into a useful form, and develop skill in 5. All students will read and 5. Students will use methods of analyze a wide variety of classic representing and reading data social science to answer displayed in different forms. and contemporary literature and questions about society. other texts to seek information,

### Strand 2: Reflecting on Scientific Knowledge

2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.

- 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.
- 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers.
- 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations.

- ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

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	and general themes within and	
5.1 Students understand and use	across texts.	
various types of operations (e.g.		
addition, subtraction,	10. All students will apply	
multiplication, division) to solve	knowledge, ideas, and issues	
problems.	drawn from text to their lives	
problems.	and the lives of others.	
5.2 Students analyza nrahlama ta	and the rives of others.	
5.2 Students analyze problems to	11 411 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
determine an appropriate process	11. All students will define and	
for solution, and use algebraic	investigate important issues and	
notations to model or represent	problems using a variety of	
problems.	resources, including technology	
	to explore and create texts	
6.1 Students develop an		
understanding of the notion of	12. All students will develop	
certainty and of probability as a	and apply personal, shared, and	
measure of the degree of	academic criteria for the	
likelihood that can be assigned	employment, appreciation, and	
to a given event based on the	evaluation of their own and	
knowledge available, and make	other' oral, written, and visual	
critical judgments about claims	texts.	
that are made in probabilistic		
situations.		
6.2 Students investigate practical		
situations such as scheduling,		
routing, sequencing, networking,		
organizing and classifying, and		
analyze ideas like recurrence		
relations, induction,		
iteration, and algorithm design.		
iteration, and argorithm design.	<u> </u>	

	Michigan Curriculum Frameworks					
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D 4	(AS A	(As Assessed by the Michigan Educational Assessment Program –MEAP)				
Program Area						
Standards	Science Strands	Mathematics Content	English Language Arts	Social Studies Strands		
Identification Here		Standards	Standards			
3) Students shall understand the interrelationships of Michigan agriculture, natural resources and society, including factors that influence agricultural activities, while fostering resource conservation.	Strand 1: Constructing New Scientific Knowledge  1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.  Strand 2: Reflecting on Scientific Knowledge	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change.  2.1 Students develop spatial sense, use shape as an analytical and descriptive tool, identify	1. All students will demonstrate the ability to read and comprehend general and technical materials.  2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.  3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.  4. All students will use the English language effectively.  5. All students will read and	Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.      Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.      Students will use knowledge of American government and politics to make informed decisions about government and their communities.      Students will use knowledge of the production, distribution and consumption of goods and		
	analyze claims for their	characters and define shapes,	analyze a wide variety of classic	services to make personal and		
	scientific merit and explain	identify properties and describe	and contemporary literature and	societal decisions about the use		
	how scientists decide what		other texts to seek information,			
	now scientists decide what	relationships among shapes.	other texts to seek information,	of scarce resources.		

### **Strand 3:** <u>Using scientific</u> <u>knowledge in Life Science</u>.

- 3.2 All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions.
- 3.3 All students will investigate the explain how characteristics of living things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits can be established by

- 2.2 Students identify location of objects, identify location relative to other objects, and describe the effects of transformations (e.g. sliding, flipping, turning, enlarging, reducing) on an object.
- 2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision.
- 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.
- 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.
- 4.1 Students experience counting

- ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

changing or manipulating genes.

- 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time.
- 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe how materials cycle through an ecosystem and get reused in the environment and analyze how human and environments interact

and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers.

- 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations.
- 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers.
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.

and general themes within and across texts.

- 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.
- 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts
- 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.

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knowle Science  4.1 All measur things a what the made of describe and expand may with mater and matter thow live human matter energy; change related molecular change.	students will re and describe the around us; explain ne world around us is of; identify and oe forms of energy; plain how electricity agnetism interact latter  students will gate, describe and e ways in which changes; describe ving things and technology change and transform ; explain how visible es in matter are to atoms and ales; and how es in matter are to changes in	6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations.  6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	
knowle Science			
<u>5.1 </u> All	students will		

describe an the earth's over time;	e earth's surface; d explain how features change and analyze echnology on the face and	
found on ea characterist how water analyze the	e where water is arth; describe the tics of water and moves; and interaction of vities with the	

		Michigan Curriculum Framcusculus				
	, .	Michigan Curriculum Frameworks				
	(As A	(As Assessed by the Michigan Educational Assessment Program –MEAP)				
Program Area						
Standards	Science Strands	Mathematics Content	English Language Arts	Social Studies Strands		
<b>Identification Here</b>		Standards	Standards			
4) Students shall	Strand 1: Constructing	1.1 Students recognize	1. All students will demonstrate	1. Students use knowledge of		
understand the	New Scientific Knowledge	similarities and generalize	the ability to read and	the past to construct meaningful		
interrelationships		patterns, use patterns to create	comprehend general and	understanding of our diverse		
among agriculture,	1.1 All students will ask	models and make predictions,	technical materials.	cultural heritage and to inform		
natural resources,	questions that help them	describe the nature of patterns		their civic judgments.		
and the government,	learn about the world;	and relationships and construct	2. All students will demonstrate			
including factors that	design and conduct	representations of mathematical	the ability to write clear and	3. Students will use knowledge		
influence policy	investigations using	relationships.	grammatically correct sentences,	of American government and		
decisions. Students	appropriate methodology		paragraphs, and compositions.	politics to make informed		
shall appreciate the	and technology, learn from	1.2 Students describe the		decisions about government		
wide variety of	books and other sources of	relationships among variables,		and their communities.		
leadership	information; communicate	predict what will happen to one	3. All students will focus on			
development	their findings using	variable as another variable is	meaning and communication as	4. Students will use knowledge		
activities available	appropriate technology and	changed, analyze natural	they listen, speak, view, read and	of the production, distribution		

through the National reconstruct previously variation and sources of write in personal, social. and consumption of goods and FFA Organization. learned knowledge. variability to compare patterns occupational and Civic contexts. services to make personal and **Strand 2**: Reflecting on of change. societal decisions about the use 4. All students will use the Scientific Knowledge of scarce resources English language effectively. 2.1 All students will 3.1 Students will collect and 5. Students will use methods of analyze claims for their explore data, organize data into a 5. All students will read and social science to answer useful form, and develop skill in analyze a wide variety of classic scientific merit and explain questions about society. how scientists decide what representing and reading data and contemporary literature and displayed in different forms. constitutes scientific other texts to seek information. knowledge; how science is ideas, enjoyment, and related to other ways of 3.2 Students will examine data understanding of their knowing; how science and and describe characteristics of a individuality, our common 6. Student will analyze public heritage and common humanity, technology affect our distribution, relate data to the issues and construct and society; and how people of express thoughtful positions of situation from which they arose, and the rich diversity of our diverse cultures have and use data to answer questions society. these issues. contributed to and convincingly and persuasively. 7. Student will act influenced developments in science. 3.3 Students draw defensible 6. All students will learn to constructively to further the inferences about unknown communicate information public good. outcomes, make predictions, and accurately and effectively and identify the degree of confidence demonstrate their expressive they have in their predictions. abilities by creating oral, written, and visual texts and enlighten 4.1 Students experience counting and engage and audience. and measuring activities to 7. All students will demonstrate. develop intuitive sense about numbers, develop understanding analyze, and reflect upon the about properties of numbers, skill and process used to understand the need for and communicate through listening. existence of different sets of speaking, viewing, reading, and numbers, and investigate writing. properties of special numbers. 8. All students will explore and 4.2 Student recognize that use the characteristics of numbers are used in different different types of texts, aesthetic

elements, and mechanics—

ways such as counting,

measuring, ordering, and including text structure, estimating, understand and figurative and descriptive produce multiple representations language, spelling, punctuation, of a number, and translate and grammar—to construct and among equivalent convey meaning. representations. 9. All students will demonstrate 5.1 Students understand and use understanding of the complexity various types of operations (e.g. of enduring issues recurring addition, subtraction, problems by making connections and general themes within and multiplication, division) to solve problems. across texts. 5.2 Students analyze problems to 10. All students will apply determine an appropriate process knowledge, ideas, and issues for solution, and use algebraic drawn from text to their lives notations to model or represent and the lives of others. problems. 11. All students will define and 6.1 Students develop an investigate important issues and understanding of the notion of problems using a variety of certainty and of probability as a resources, including technology measure of the degree of to explore and create texts likelihood that can be assigned to a given event based on the 12. All students will develop knowledge available, and make and apply personal, shared, and critical judgments about claims academic criteria for the that are made in probabilistic employment, appreciation, and evaluation of their own and situations. other' oral, written, and visual 6.2 Students investigate practical texts. situations such as scheduling,

routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence

iteration, and algorithm design.

relations, induction,

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Standards	Science Strands	<b>Mathematics Content</b>	English Language Arts	Social Studies Strands	
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1) Students shall	Strand 1: Constructing	1.1 Students recognize	1. All students will demonstrate	1. Students use knowledge of	
understand growth	New Scientific Knowledge	similarities and generalize	the ability to read and	the past to construct meaningful	
and development of		patterns, use patterns to create	comprehend general and	understanding of our diverse	
plants, including the	1.1 All students will ask	models and make predictions,	technical materials.	cultural heritage and to inform	
functions of plant	questions that help them	describe the nature of patterns		their civic judgments.	
parts, and	learn about the world;	and relationships and construct	2. All students will demonstrate		
reproductive	design and conduct	representations of mathematical	the ability to write clear and	2. Students will use knowledge	
systems.	investigations using	relationships.	grammatically correct sentences,	of spatial patterns on earth to	
	appropriate methodology		paragraphs, and compositions.	understand processes that shape	
	and technology, learn from	1.2 Students describe the		human environments and to	
	books and other sources of	relationships among variables,		make decisions about society.	
	information; communicate	predict what will happen to one	3. All students will focus on	_	
	their findings using	variable as another variable is	meaning and communication as	3. Students will use knowledge	
	appropriate technology and	changed, analyze natural	they listen, speak, view, read and	of American government and	
	reconstruct previously	variation and sources of	write in personal, social,	politics to make informed	
	learned knowledge.	variability to compare patterns	occupational and Civic contexts.	decisions about government	
	_	of change.	_	and their communities.	
	Strand 2: Reflecting on	_	4. All students will use the		
	Scientific Knowledge		English language effectively.	4. Students will use knowledge	
		3.1 Students will collect and		of the production, distribution	
	2.1 All students will	explore data, organize data into a	5. All students will read and	and consumption of goods and	
	analyze claims for their	useful form, and develop skill in	analyze a wide variety of classic	services to make personal and	
	scientific merit and explain	representing and reading data	and contemporary literature and	societal decisions about the use	
	how scientists decide what	displayed in different forms.	other texts to seek information,	of scarce resources.	

### **Strand 3:** <u>Using scientific</u> knowledge in Life Science.

- 3.1 All students will apply an understanding of cells to the functioning of multicellular organism; and explain how cells, grow, develop, and reproduce.
- 3.2 All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions.
- 3.3 All students will investigate the explain how characteristics of living

- 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.
- 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations.

- ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits can be established by changing or manipulating genes. 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.

and general themes within and across texts.

3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time.

10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.

11. All students will define and investigate important issues and problems using a variety of resources, including technology

12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.

to explore and create texts

3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe how materials cycle through an ecosystem and get reused in the environment and analyze

how human and environments interact.		
Strand 4: <u>Using Scientifi</u> knowledge in Physical <u>Science:</u>	2	
4.4 All students will describe sounds and sound waves; explain shadows, color, and other light phenomena; measure and describe vibrations and waves; and explain how waves and vibrations transfer energy.		
Strand 5: <u>Using Scientifi</u> <u>knowledge in Earth</u> <u>Science.</u>	2	
5.2 All students will demonstrate where water is found on earth; describe the characteristics of water and how water moves; and analyze the interaction of human activities with the hydrosphere.	e	

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		Michigan Curriculum Frameworks			
	(As A	(As Assessed by the Michigan Educational Assessment Program –MEAP)			
Program Area					
Standards	Science Strands	<b>Mathematics Content</b>	English Language Arts	Social Studies Strands	
<b>Identification Here</b>		Standards	Standards		
2) Students will	Strand 1: Constructing	1.1 Students recognize	1. All students will demonstrate	1. Students use knowledge of	
understand the role	New Scientific Knowledge	similarities and generalize	the ability to read and	the past to construct meaningful	
of soil in plant		patterns, use patterns to create	comprehend general and	understanding of our diverse	
production including	1.1 All students will ask	models and make predictions,	technical materials.	cultural heritage and to inform	
factors which affect	questions that help them	describe the nature of patterns		their civic judgments.	
soil productivity.	learn about the world;	and relationships and construct	2. All students will demonstrate		
	design and conduct	representations of mathematical	the ability to write clear and	2. Students will use knowledge	
	investigations using	relationships.	grammatically correct sentences,	of spatial patterns on earth to	
	appropriate methodology		paragraphs, and compositions.	understand processes that shape	
	and technology, learn from	1.2 Students describe the		human environments and to	
	books and other sources of	relationships among variables,		make decisions about society.	
	information; communicate	predict what will happen to one	3. All students will focus on	_	
	their findings using	variable as another variable is	meaning and communication as	3. Students will use knowledge	
	appropriate technology and	changed, analyze natural	they listen, speak, view, read and	of American government and	
	reconstruct previously	variation and sources of	write in personal, social,	politics to make informed	
	learned knowledge.	variability to compare patterns	occupational and Civic contexts.	decisions about government	
	_	of change.		and their communities.	
	Strand 2: Reflecting on	_	4. All students will use the		
	Scientific Knowledge	2.3 Students compare attributes	English language effectively.	4. Students will use knowledge	
		of two objects or of one object		of the production, distribution	
	2.1 All students will	with a standard (unit) and	5. All students will read and	and consumption of goods and	
	analyze claims for their	analyze situations to determine	analyze a wide variety of classic	services to make personal and	
	scientific merit and explain	what measurement(s) should be	and contemporary literature and	societal decisions about the use	
	how scientists decide what	made and to what level of	other texts to seek information,	of scarce resources.	

### **Strand 3:** <u>Using scientific</u> knowledge in Life Science.

- 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time.
- 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe

precision.

- 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.
- 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.
- 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers.
- 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations

- ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

how materials cycle through an ecosystem and get reused in the environment and analyze how human and environments interact.

**Strand 4**: <u>Using Scientific</u> <u>knowledge in Physical</u> Science:

- 4.1 All students will measure and describe the things around us; explain what the world around us is made of; identify and describe forms of energy; and explain how electricity and magnetism interact with matter
- 4.2 All students will investigate, describe and analyze ways in which matter changes; describe how living things and human technology change matter and transform energy; explain how visible changes in matter are related to atoms and molecules; and how changes in matter are related to changes in energy.

of a number, and translate among equivalent representations.

- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.
- 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations.

and general themes within and across texts.

- 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.
- 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts
- 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.

Strand 5: Using Scientific knowledge in Earth Science.		
5.1 All students will describe the earth's surface; describe and explain how the earth's features change over time; and analyze effects of technology on the earth's surface and resources.		
5.2 All students will demonstrate where water is found on earth; describe the characteristics of water and how water moves; and analyze the interaction of human activities with the hydrosphere.		

	Michigan Curriculum Frameworks (As Assessed by the Michigan Educational Assessment Program –MEAP)			
Program Area Standards Identification Here	Science Strands	Mathematics Content Standards	English Language Arts Standards	Social Studies Strands
3) Students shall understand the role of nutrients in plant growth and development.	Strand 1: Constructing New Scientific Knowledge  1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.  Strand 2: Reflecting on Scientific Knowledge  2.1 All students will analyze claims for their scientific merit and explain how scientists decide what	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change.  2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of	<ol> <li>All students will demonstrate the ability to read and comprehend general and technical materials.</li> <li>All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.</li> <li>All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.</li> <li>All students will use the English language effectively.</li> <li>All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,</li> </ol>	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.  2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.  3. Students will use knowledge of American government and politics to make informed decisions about government and their communities.  4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

### **Strand 3:** <u>Using scientific</u> knowledge in Life Science.

- 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time.
- 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe

precision.

- 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.
- 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.
- 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers.
- 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations

ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.

- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

how materials cycle through an ecosystem and get reused in the environment and analyze how human and environments interact.

Strand 5: <u>Using Scientific</u> <u>knowledge in Earth</u> <u>Science.</u>

5.2 All students will demonstrate where water is found on earth; describe the characteristics of water and how water moves; and analyze the interaction of human activities with the hydrosphere.

of a number, and translate among equivalent representations.

- 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers.
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.

and general themes within and across texts.

- 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.
- 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts
- 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.

	Mighton Commission Francisco			
	Michigan Curriculum Frameworks			
	(As Assessed by the Michigan Educational Assessment Program –MEAP)			
Program Area				
Standards	Science Strands	Mathematics Content	English Language Arts	Social Studies Strands
<b>Identification Here</b>		Standards	Standards	
4) Students shall	Strand 1: Constructing	1.1 Students recognize	1. All students will demonstrate	1. Students use knowledge of
understand the	New Scientific Knowledge	similarities and generalize	the ability to read and	the past to construct meaningful
biology of pests and		patterns, use patterns to create	comprehend general and	understanding of our diverse
their impact on	1.1 All students will ask	models and make predictions,	technical materials.	cultural heritage and to inform
agriculture with	questions that help them	describe the nature of patterns		their civic judgments.
special reference to	learn about the world;	and relationships and construct	2. All students will demonstrate	
socio-economic and	design and conduct	representations of mathematical	the ability to write clear and	2. Students will use knowledge
environmentally	investigations using	relationships.	grammatically correct sentences,	of spatial patterns on earth to
sound pest	appropriate methodology		paragraphs, and compositions.	understand processes that shape
management.	and technology, learn from	1.2 Students describe the		human environments and to
	books and other sources of	relationships among variables,		make decisions about society.
	information; communicate	predict what will happen to one	3. All students will focus on	
	their findings using	variable as another variable is	meaning and communication as	3. Students will use knowledge
	appropriate technology and	changed, analyze natural	they listen, speak, view, read and	of American government and
	reconstruct previously	variation and sources of	write in personal, social,	politics to make informed
	learned knowledge.	variability to compare patterns	occupational and Civic contexts.	decisions about government
		of change.	4 44 . 4	and their communities.
	Strand 2: Reflecting on		4. All students will use the	
	Scientific Knowledge	3.1 Students will collect and	English language effectively.	4. Students will use knowledge
	21.411.4.1.4.11	explore data, organize data into a	5 411 4 1 4 211 1 1	of the production, distribution
	2.1 All students will	useful form, and develop skill in	5. All students will read and	and consumption of goods and
	analyze claims for their	representing and reading data	analyze a wide variety of classic	services to make personal and
	scientific merit and explain	displayed in different forms.	and contemporary literature and	societal decisions about the use
	how scientists decide what		other texts to seek information,	of scarce resources.

### **Strand 3:** <u>Using scientific</u> knowledge in Life Science.

- 3.2 All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions.
- 3.3 All students will investigate the explain how characteristics of living things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits can be established by

- 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.
- 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers.
- 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers.
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve

- ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

changing or manipulating genes.

- 3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time.
- 3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and explain how communities of living things change over a period of time; describe how materials cycle through an ecosystem and get reused in the environment and analyze how human and environments interact.

problems.

- 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.
- 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims that are made in probabilistic situations.
- 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.

and general themes within and across texts.

- 10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.
- 11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts
- 12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.

	Michigan Curriculum Frameworks			
	(As Assessed by the Michigan Educational Assessment Program –MEAP)			
Program Area Standards Identification Here	Science Strands	Mathematics Content Standards	English Language Arts Standards	Social Studies Strands
5) Students shall understand the concept of land measurement and land descriptions.	Strand 1: Constructing New Scientific Knowledge  1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.  Strand 2: Reflecting on Scientific Knowledge	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change.  2.2 Students identify location of objects, identify location relative	1. All students will demonstrate the ability to read and comprehend general and technical materials.  2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.  3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.  4. All students will use the English language effectively.	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.  2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.  3. Students will use knowledge of American government and politics to make informed decisions about government and their communities.  4. Students will use knowledge of the production, distribution

2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.

#### Strand 4: <u>Using Scientific</u> <u>knowledge in Physical</u> <u>Science:</u>

4.1 All students will measure and describe the things around us; explain what the world around us is made of; identify and describe forms of energy; and explain how electricity and magnetism interact with matter energy.

- to other objects, and describe the effects of transformations (e.g. sliding, flipping, turning, enlarging, reducing) on an object.
- 2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision.
- 3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.
- 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.
- 4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding

- 5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate

- and consumption of goods and services to make personal and societal decisions about the use of scarce resources.
- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues
- 7. Student will act constructively to further the public good.

about properties of numbers, understanding of the complexity of enduring issues recurring understand the need for and problems by making connections existence of different sets of numbers, and investigate and general themes within and properties of special numbers. across texts. 4.2 Student recognize that 10. All students will apply numbers are used in different knowledge, ideas, and issues drawn from text to their lives ways such as counting, measuring, ordering, and and the lives of others. estimating, understand and produce multiple representations 11. All students will define and of a number, and translate investigate important issues and among equivalent problems using a variety of resources, including technology representations. to explore and create texts 5.1 Students understand and use various types of operations (e.g. 12. All students will develop addition, subtraction, and apply personal, shared, and multiplication, division) to solve academic criteria for the problems. employment, appreciation, and evaluation of their own and 5.2 Students analyze problems to other' oral, written, and visual determine an appropriate process texts. for solution, and use algebraic notations to model or represent problems.

### Michigan Curriculum Frameworks (As Assessed by the Michigan Educational Assessment Program –MEAP)

	(As Assessed by the Michigan Educational Assessment Program —MEAP)			
Program Area Standards Identification Here	Science Strands	Mathematics Content Standards	English Language Arts Standards	Social Studies Strands
6) Students shall examine and assess careers in the plant science field.			<ol> <li>All students will demonstrate the ability to read and comprehend general and technical materials.</li> <li>All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.</li> <li>All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.</li> <li>All students will use the English language effectively.</li> <li>All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,</li> </ol>	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.  2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.  3. Students will use knowledge of American government and politics to make informed decisions about government and their communities.  4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

ideas, enjoyment, and understanding of their individuality, our common	5. Students will use methods of social science to answer
heritage and common humanity, and the rich diversity of our	questions about society.
society.	6. Student will analyze public issues and construct and
6. All students will learn to	express thoughtful positions of these issues.
communicate information accurately and effectively and	7. Student will act
demonstrate their expressive abilities by creating oral, written	constructively to further the public good.
and visual texts and enlighten and engage and audience.	
7. All students will demonstrate analyze, and reflect upon the	
skill and process used to communicate through listening,	
speaking, viewing, reading, and writing.	
8. All students will explore and use the characteristics of	
different types of texts, aesthetic elements, and mechanics—	
including text structure, figurative and descriptive	
language, spelling, punctuation, and grammar—to construct and	
convey meaning.	
9. All students will demonstrate understanding of the complexity	
of enduring issues recurring problems by making connections	

	and general themes within and across texts.	
	10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.	
	11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts	
	12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	

		Michigan Cumi	aulum Framawarks	
	Michigan Curriculum Frameworks (As Assessed by the Michigan Educational Assessment Program –MEAP)			
D 4	(AS A	issessea by the Michigan Eauc	alional Assessment Program :	-MEAP)
Program Area				
Standards	Science Strands	Mathematics Content	English Language Arts	Social Studies Strands
<b>Identification Here</b>		Standards	Standards	
1) Students shall understand classification, natural selection, and the role of domestic animals in agriculture and their importance in the food production chain.	Strand 1: Constructing New Scientific Knowledge  1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.  Strand 2: Reflecting on Scientific Knowledge  2.1 All students will analyze claims for their	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision.  3.1 Students will collect and explore data, organize data into a useful form, and develop skill in representing and reading data displayed in different forms.	1. All students will demonstrate the ability to read and comprehend general and technical materials.  2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.  3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.  4. All students will use the English language effectively.  5. All students will read and analyze a wide variety of classic	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.  2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.  3. Students will use knowledge of American government and politics to make informed decisions about government and their communities.  4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and
		displayed in different forms.		societal decisions about the use
	scientific merit and explain		and contemporary literature and	
	how scientists decide what		other texts to seek information,	of scarce resources.

constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.

### **Strand 3:** <u>Using scientific</u> knowledge in Life Science.

- 3.2 All students will use classification systems to describe groups of living things; compare and contrast differences in the life cycles of living things; investigate and explain how living things obtain and use energy; and analyze how parts of living things are adapted to carry out specific functions.
- 3.3 All students will investigate the explain how characteristics of living things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits can be established by

- 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.
- 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers.
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.
- 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and

- ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

3.4 All students will explain how scientists construct and scientifically test theories concerning the origin of life and evolution of species; compare ways that living organisms are adapted (suited) to survive and reproduce in their environments and analyze how species change through time.  3.5 All students will explain how parts of an ecosystem are related and how they interact; explain how energy is distributed to living things in an ecosystem; investigate and	analyze ideas like recurrence relations, induction, iteration, and algorithm design.	and general themes within and across texts.  10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.  11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts  12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	
living things in an		texts.	
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### Michigan Curriculum Frameworks (As Assessed by the Michigan Educational Assessment Program –MEAP) Program Area Standards **Science Strands Mathematics Content English Language Arts Social Studies Strands Identification Here** Standards Standards 1. All students will demonstrate 2) Students will **Strand 1:** Constructing 1.1 Students recognize 1. Students use knowledge of the past to construct meaningful New Scientific Knowledge similarities and generalize the ability to read and develop a basic understanding of the patterns, use patterns to create comprehend general and understanding of our diverse 1.1 All students will ask technical materials. structure, function, models and make predictions, cultural heritage and to inform their civic judgments. describe the nature of patterns and maintenance of questions that help them the major animal learn about the world; and relationships and construct 2. All students will demonstrate body systems and design and conduct representations of mathematical the ability to write clear and 2. Students will use knowledge investigations using grammatically correct sentences, of spatial patterns on earth to their components relationships. appropriate methodology paragraphs, and compositions. understand processes that shape using examples drawn from humans and technology, learn from 3.1 Students will collect and human environments and to as well as animals of books and other sources of explore data, organize data into a make decisions about society. economic information: communicate useful form, and develop skill in 3. All students will focus on their findings using representing and reading data meaning and communication as 3. Students will use knowledge importance. appropriate technology and displayed in different forms. they listen, speak, view, read and of American government and reconstruct previously write in personal, social, politics to make informed learned knowledge. 3.2 Students will examine data occupational and Civic contexts. decisions about government and describe characteristics of a and their communities 4. All students will use the distribution, relate data to the situation from which they arose, English language effectively. 4. Students will use knowledge and use data to answer questions of the production, distribution convincingly and persuasively. 5. All students will read and and consumption of goods and analyze a wide variety of classic services to make personal and

3.3 Students draw defensible

inferences about unknown

societal decisions about the use

of scarce resources.

and contemporary literature and

other texts to seek information,

### Strand 2: Reflecting on Scientific Knowledge

2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.

### **Strand 3:** <u>Using scientific</u> knowledge in Life Science.

3.1 All students will apply an understanding of cells to the functioning of multicellular organism; and explain how cells, grow, develop, and reproduce. outcomes, make predictions, and identify the degree of confidence they have in their predictions.

- ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

and general themes within and across texts.
10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.
11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts
12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.

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	Michigan Curriculum Frameworks			
	(As A	Assessed by the Michigan Educ	cational Assessment Program	–MEAP)
Program Area				
Standards	Science Strands	<b>Mathematics Content</b>	English Language Arts	Social Studies Strands
<b>Identification Here</b>		Standards	Standards	
3) Students will	Strand 1: Constructing	1.1 Students recognize	1. All students will demonstrate	1. Students use knowledge of
develop a basic	New Scientific Knowledge	similarities and generalize	the ability to read and	the past to construct meaningful
understanding of the		patterns, use patterns to create	comprehend general and	understanding of our diverse
genetics, breeding	1.1 All students will ask	models and make predictions,	technical materials.	cultural heritage and to inform
parturition, and	questions that help them	describe the nature of patterns		their civic judgments.
animal behaviors.	learn about the world;	and relationships and construct	2. All students will demonstrate	
	design and conduct	representations of mathematical	the ability to write clear and	2. Students will use knowledge
	investigations using	relationships.	grammatically correct sentences,	of spatial patterns on earth to
	appropriate methodology		paragraphs, and compositions.	understand processes that shape
	and technology, learn from	3.1 Students will collect and		human environments and to
	books and other sources of	explore data, organize data into a		make decisions about society.
	information; communicate	useful form, and develop skill in	3. All students will focus on	
	their findings using	representing and reading data	meaning and communication as	3. Students will use knowledge
	appropriate technology and	displayed in different forms.	they listen, speak, view, read and	of American government and
	reconstruct previously		write in personal, social,	politics to make informed
	learned knowledge.	3.2 Students will examine data	occupational and Civic contexts.	decisions about government
		and describe characteristics of a		and their communities.
		distribution, relate data to the	4. All students will use the	
		situation from which they arose,	English language effectively.	4. Students will use knowledge
		and use data to answer questions		of the production, distribution
		convincingly and persuasively.	5. All students will read and	and consumption of goods and
			analyze a wide variety of classic	services to make personal and
		3.3 Students draw defensible	and contemporary literature and	societal decisions about the use
		inferences about unknown	other texts to seek information,	of scarce resources.

### Strand 2: Reflecting on Scientific Knowledge

2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.

### **Strand 3:** <u>Using scientific</u> knowledge in Life Science.

- 3.1 All students will apply an understanding of cells to the functioning of multicellular organism; and explain how cells, grow, develop, and reproduce.
- 3.3 All students will investigate the explain how characteristics of living things are passed on thorough generations; explain why organisms within a species are different from one another; and explain how new traits

outcomes, make predictions, and identify the degree of confidence they have in their predictions.

- 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers.
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.

ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.

- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

can be established by	and general themes within and
changing or manipulating	across texts.
genes.	
	10. All students will apply
3.4 All students will explain	knowledge, ideas, and issues
how scientists construct and	drawn from text to their lives
scientifically test theories	and the lives of others.
concerning the origin of life	
and evolution of species;	11. All students will define and
compare ways that living	investigate important issues and
organisms are adapted	problems using a variety of
(suited) to survive and	resources, including technology
reproduce in their	to explore and create texts
environments and analyze	
how species change through	12. All students will develop
time.	and apply personal, shared, and
	academic criteria for the
	employment, appreciation, and
	evaluation of their own and
	other' oral, written, and visual
	texts.

### Michigan Curriculum Frameworks (As Assessed by the Michigan Educational Assessment Program –MEAP) Program Area Standards **Science Strands Mathematics Content English Language Arts Social Studies Strands Identification Here Standards** Standards 4) Students shall **Strand 1:** Constructing 1.1 Students recognize 1. All students will demonstrate 1. Students use knowledge of New Scientific Knowledge similarities and generalize the ability to read and the past to construct meaningful develop an understanding of the patterns, use patterns to create comprehend general and understanding of our diverse 1.1 All students will ask technical materials. factors involved in models and make predictions, cultural heritage and to inform their civic judgments. describe the nature of patterns animal nutrition, questions that help them animal feeding, and learn about the world; and relationships and construct 2. All students will demonstrate design and conduct the basic feedstuffs representations of mathematical the ability to write clear and 2. Students will use knowledge of spatial patterns on earth to available for that investigations using relationships. grammatically correct sentences, paragraphs, and compositions. appropriate methodology purpose. understand processes that shape and technology, learn from 2.3 Students compare attributes human environments and to of two objects or of one object books and other sources of make decisions about society. information: communicate with a standard (unit) and 3. All students will focus on their findings using analyze situations to determine meaning and communication as 3. Students will use knowledge appropriate technology and what measurement(s) should be they listen, speak, view, read and of American government and reconstruct previously made and to what level of write in personal, social, politics to make informed learned knowledge. precision. occupational and Civic contexts. decisions about government and their communities 3.1 Students will collect and 4 All students will use the English language effectively. 4. Students will use knowledge explore data, organize data into a useful form, and develop skill in of the production, distribution representing and reading data 5. All students will read and and consumption of goods and analyze a wide variety of classic services to make personal and displayed in different forms. societal decisions about the use and contemporary literature and 3.2 Students will examine data other texts to seek information, of scarce resources.

### Strand 2: Reflecting on Scientific Knowledge

2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.

### **Strand 3:** <u>Using scientific</u> knowledge in Life Science.

3.1 All students will apply an understanding of cells to the functioning of multicellular organism; and explain how cells, grow, develop, and reproduce.

- and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations.
- 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers.
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.

- ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

and general themes within and across texts.
10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.
11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts
12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.

Michigan Curriculum Frameworks

5. All students will read and

analyze a wide variety of classic

Wilchigan Currentum Frameworks			
(As Assessed by the Michigan Educational Assessment Program –MEAP)			
Science Strands	Mathematics Content Standards	English Language Arts Standards	Social Studies Strands
Strand 1: Constructing New Scientific Knowledge  1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.  Strand 2: Reflecting on Scientific Knowledge	1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision.  3.1 Students will collect and explore data, organize data into a	1. All students will demonstrate the ability to read and comprehend general and technical materials.  2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.  3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.  4. All students will use the English language effectively.	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.  2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.  3. Students will use knowledge of American government and politics to make informed decisions about government and their communities.  4. Students will use knowledge
	useful form, and develop skill in		of the production, distribution
	Science Strands  Strand 1: Constructing New Scientific Knowledge  1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.  Strand 2: Reflecting on	Science Strands  Mathematics Content Standards  1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision.  Strand 2: Reflecting on  Mathematics Content Standards  1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  2.3 Students compare attributes of two objects or of one object with a standard (unit) and analyze situations to determine what measurement(s) should be made and to what level of precision.	Science Strands  Mathematics Content Standards  Strand 1: Constructing New Scientific Knowledge  1.1 All students will ask questions that help them learn about the world; design and conduct investigations using appropriate methodology and technology, learn from books and other sources of information; communicate their findings using appropriate technology and reconstruct previously learned knowledge.  Strand 2: Reflecting on Scientific Knowledge  Mathematics Content Standards  1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  2. All students will demonstrate the ability to read and comprehend general and technical materials.  2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.  3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.  Strand 2: Reflecting on Scientific Knowledge  Strand 3: Students will collect and explore data, organize data into a

representing and reading data

displayed in different forms.

2.1 All students will

analyze claims for their

and consumption of goods and

services to make personal and

scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.

- 3.2 Students will examine data and describe characteristics of a distribution, relate data to the situation from which they arose, and use data to answer questions convincingly and persuasively.
- 3.3 Students draw defensible inferences about unknown outcomes, make predictions, and identify the degree of confidence they have in their predictions.
- 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers.
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 5.2 Students analyze problems to determine an appropriate process for solution, and use algebraic notations to model or represent problems.

- and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity

- societal decisions about the use of scarce resources.
- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

	6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	of enduring issues recurring problems by making connections and general themes within and across texts.  10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.  11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts  12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	
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### Michigan Curriculum Frameworks (As Assessed by the Michigan Educational Assessment Program –MEAP) Program Area **Standards Science Strands Mathematics Content English Language Arts Social Studies Strands Identification Here Standards** Standards 6) Students will **Strand 1:** Constructing 1.1 Students recognize 1. All students will demonstrate 1. Students use knowledge of New Scientific Knowledge similarities and generalize the ability to read and the past to construct meaningful develop an appreciation for the patterns, use patterns to create comprehend general and understanding of our diverse 1.1 All students will ask technical materials. factors involved in models and make predictions, cultural heritage and to inform their civic judgments. describe the nature of patterns and the ability to questions that help them evaluate and select learn about the world: and relationships and construct 2. All students will demonstrate design and conduct livestock for specific representations of mathematical the ability to write clear and 2. Students will use knowledge of spatial patterns on earth to uses. investigations using relationships. grammatically correct sentences, appropriate methodology paragraphs, and compositions. understand processes that shape and technology, learn from 1.2 Students describe the human environments and to books and other sources of relationships among variables, make decisions about society. information: communicate predict what will happen to one 3. All students will focus on their findings using variable as another variable is meaning and communication as 3. Students will use knowledge appropriate technology and changed, analyze natural they listen, speak, view, read and of American government and reconstruct previously variation and sources of write in personal, social, politics to make informed learned knowledge. variability to compare patterns occupational and Civic contexts. decisions about government and their communities of change. 4. All students will use the English language effectively. 4. Students will use knowledge of the production, distribution 5. All students will read and and consumption of goods and analyze a wide variety of classic services to make personal and societal decisions about the use and contemporary literature and other texts to seek information, of scarce resources.

### **Strand 2**: Reflecting on Scientific Knowledge

2.1 All students will analyze claims for their scientific merit and explain how scientists decide what constitutes scientific knowledge; how science is related to other ways of knowing; how science and technology affect our society; and how people of diverse cultures have contributed to and influenced developments in science.

ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.

- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring problems by making connections

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

and general themes within and across texts.
10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.
11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts
12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.

	(As A	Issessed by the Michigan Educ	cational Assessment Program	–MEAP)
Program Area Standards Identification Here	Science Strands	Mathematics Content Standards	English Language Arts Standards	Social Studies Strands
1) Students shall be able to apply basic financial management principles to information entered in the Michigan Record Book in order to assist them in making future decisions.		1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change.  4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding about properties of numbers,	1. All students will demonstrate the ability to read and comprehend general and technical materials.  2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.  3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.  4. All students will use the English language effectively.  5. All students will read and analyze a wide variety of classic and contemporary literature and other texts to seek information,	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.  2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.  3. Students will use knowledge of American government and politics to make informed decisions about government and their communities.  4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use of scarce resources.

understand the need for and ideas, enjoyment, and 5. Students will use methods of existence of different sets of understanding of their numbers, and investigate individuality, our common social science to answer properties of special numbers. heritage and common humanity, questions about society. and the rich diversity of our 4.2 Student recognize that society. 6. Student will analyze public numbers are used in different issues and construct and ways such as counting, express thoughtful positions of measuring, ordering, and 6. All students will learn to these issues. estimating, understand and communicate information 7. Student will act produce multiple representations accurately and effectively and of a number, and translate demonstrate their expressive constructively to further the among equivalent abilities by creating oral, written, public good. and visual texts and enlighten representations. and engage and audience. 4.3 Students investigate relationships such as equality, 7. All students will demonstrate. inequality, inverses, factors and analyze, and reflect upon the multiples, and represent and skill and process used to compare very large and very communicate through listening, small numbers. speaking, viewing, reading, and writing. 5.1 Students understand and use various types of operations (e.g. 8. All students will explore and addition, subtraction. use the characteristics of multiplication, division) to solve different types of texts, aesthetic elements, and mechanics problems. including text structure, 6.2 Students investigate practical figurative and descriptive language, spelling, punctuation, situations such as scheduling. routing, sequencing, networking, and grammar—to construct and organizing and classifying, and convey meaning.

analyze ideas like recurrence

iteration, and algorithm design.

9. All students will demonstrate

understanding of the complexity of enduring issues recurring problems by making connections

relations, induction.

and general themes within and across texts.
10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.
11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts
12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.

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Program Area Standards Identification Here	Science Strands	Mathematics Content Standards	English Language Arts Standards	Social Studies Strands
2) Students shall understand the role of finance and the lending system in the agricultural industry.		1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change.  4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding	<ol> <li>All students will demonstrate the ability to read and comprehend general and technical materials.</li> <li>All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.</li> <li>All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.</li> <li>All students will use the English language effectively.</li> <li>All students will read and analyze a wide variety of classic and contemporary literature and</li> </ol>	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.  2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.  3. Students will use knowledge of American government and politics to make informed decisions about government and their communities.  4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and societal decisions about the use

about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers.

- 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations.
- 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers.
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.

other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.

- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity of enduring issues recurring

of scarce resources.

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

problems by making connections and general themes within and across texts.
10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.
11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts
12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.

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Program Area Standards Identification Here	Science Strands	Mathematics Content Standards	English Language Arts Standards	Social Studies Strands
3) Students shall understand the basic functions of the marketing process in agriculture.		1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change.  4.1 Students experience counting and measuring activities to develop intuitive sense about numbers, develop understanding	1. All students will demonstrate the ability to read and comprehend general and technical materials.  2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.  3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.  4. All students will use the English language effectively.  5. All students will read and analyze a wide variety of classic	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.  2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.  3. Students will use knowledge of American government and politics to make informed decisions about government and their communities.  4. Students will use knowledge of the production, distribution and consumption of goods and services to make personal and

about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers.

- 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations.
- 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the knowledge available, and make critical judgments about claims

and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.

- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate understanding of the complexity

societal decisions about the use of scarce resources.

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

analyze ideas like recurrence relations, induction, iteration, and algorithm design.  11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts  12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.
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	(AS A	Issessed by the Michigan Educ	anonai Assessmeni Frogram	-MEAP)
Program Area Standards Identification Here	Science Strands	Mathematics Content Standards	English Language Arts Standards	Social Studies Strands
4) Students will understood the basic concepts of computer literacy and appreciate the role of the computer applications in agriculture.		1.1 Students recognize similarities and generalize patterns, use patterns to create models and make predictions, describe the nature of patterns and relationships and construct representations of mathematical relationships.  1.2 Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability to compare patterns of change.  4.1 Students experience counting and measuring activities to develop intuitive sense about	<ol> <li>All students will demonstrate the ability to read and comprehend general and technical materials.</li> <li>All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.</li> <li>All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.</li> <li>All students will use the English language effectively.</li> <li>All students will read and</li> </ol>	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.  2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.  3. Students will use knowledge of American government and politics to make informed decisions about government and their communities.  4. Students will use knowledge of the production, distribution and consumption of goods and

numbers, develop understanding about properties of numbers, understand the need for and existence of different sets of numbers, and investigate properties of special numbers.

- 4.2 Student recognize that numbers are used in different ways such as counting, measuring, ordering, and estimating, understand and produce multiple representations of a number, and translate among equivalent representations.
- 4.3 Students investigate relationships such as equality, inequality, inverses, factors and multiples, and represent and compare very large and very small numbers
- 5.1 Students understand and use various types of operations (e.g. addition, subtraction, multiplication, division) to solve problems.
- 6.1 Students develop an understanding of the notion of certainty and of probability as a measure of the degree of likelihood that can be assigned to a given event based on the

analyze a wide variety of classic and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.

- 6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
- 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
- 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
- 9. All students will demonstrate

services to make personal and societal decisions about the use of scarce resources.

- 5. Students will use methods of social science to answer questions about society.
- 6. Student will analyze public issues and construct and express thoughtful positions of these issues.
- 7. Student will act constructively to further the public good.

	knowledge available, and make critical judgments about claims that are made in probabilistic situations.  6.2 Students investigate practical situations such as scheduling, routing, sequencing, networking, organizing and classifying, and analyze ideas like recurrence relations, induction, iteration, and algorithm design.	understanding of the complexity of enduring issues recurring problems by making connections and general themes within and across texts.  10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.  11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts  12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and other' oral, written, and visual texts.	
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	(As A	issessea by the Michigan Eauc	anonai Assessmeni i rogram	-MEAF)
Program Area Standards Identification Here	Science Strands	Mathematics Content Standards	English Language Arts Standards	Social Studies Strands
5) Students shall understand the four types of business structures in agriculture.			<ol> <li>All students will demonstrate the ability to read and comprehend general and technical materials.</li> <li>All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.</li> <li>All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.</li> <li>All students will use the English language effectively.</li> <li>All students will read and</li> </ol>	1. Students use knowledge of the past to construct meaningful understanding of our diverse cultural heritage and to inform their civic judgments.  2. Students will use knowledge of spatial patterns on earth to understand processes that shape human environments and to make decisions about society.  3. Students will use knowledge of American government and politics to make informed decisions about government and their communities.  4. Students will use knowledge of the production, distribution and consumption of goods and

analyze a wide variety of classic services to make personal and and contemporary literature and societal decisions about the use other texts to seek information, of scarce resources. ideas, enjoyment, and understanding of their 5. Students will use methods of individuality, our common social science to answer heritage and common humanity, questions about society. and the rich diversity of our society. 6. Student will analyze public issues and construct and express thoughtful positions of 6. All students will learn to these issues. communicate information accurately and effectively and 7. Student will act demonstrate their expressive constructively to further the abilities by creating oral, written, public good. and visual texts and enlighten and engage and audience. 7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing. 8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning. 9. All students will demonstrate

10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.  11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts  12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and	understanding of the complexity of enduring issues recurring problems by making connections and general themes within and across texts.
investigate important issues and problems using a variety of resources, including technology to explore and create texts  12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and	knowledge, ideas, and issues drawn from text to their lives
and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and	investigate important issues and problems using a variety of resources, including technology
other' oral, written, and visual	and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and

	(AS A	issessea by the Michigan Eauc	unonai Assessmeni i rogram	-WIEAI)
Program Area Standards Identification Here	Science Strands	Mathematics Content Standards	English Language Arts Standards	Social Studies Strands
6) Students will gain an understanding of the importance of effective communications and the role that communication plays in the agriculture and natural resources industries.			1. All students will demonstrate the ability to read and comprehend general and technical materials.  2. All students will demonstrate the ability to write clear and grammatically correct sentences, paragraphs, and compositions.  3. All students will focus on meaning and communication as they listen, speak, view, read and write in personal, social, occupational and Civic contexts.  4. All students will use the English language effectively.  5. All students will read and	<ul> <li>5. Students will use methods of social science to answer questions about society.</li> <li>6. Student will analyze public issues and construct and express thoughtful positions of these issues.</li> <li>7. Student will act constructively to further the public good.</li> </ul>

analyze a wide variety of classic and contemporary literature and other texts to seek information, ideas, enjoyment, and understanding of their individuality, our common heritage and common humanity, and the rich diversity of our society.
6. All students will learn to communicate information accurately and effectively and demonstrate their expressive abilities by creating oral, written, and visual texts and enlighten and engage and audience.
7. All students will demonstrate, analyze, and reflect upon the skill and process used to communicate through listening, speaking, viewing, reading, and writing.
8. All students will explore and use the characteristics of different types of texts, aesthetic elements, and mechanics—including text structure, figurative and descriptive language, spelling, punctuation, and grammar—to construct and convey meaning.
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10. All students will apply knowledge, ideas, and issues drawn from text to their lives and the lives of others.  11. All students will define and investigate important issues and problems using a variety of resources, including technology to explore and create texts  12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and	understanding of the complexity of enduring issues recurring problems by making connections and general themes within and across texts.
investigate important issues and problems using a variety of resources, including technology to explore and create texts  12. All students will develop and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and	knowledge, ideas, and issues drawn from text to their lives
and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and	investigate important issues and problems using a variety of resources, including technology
other' oral, written, and visual	and apply personal, shared, and academic criteria for the employment, appreciation, and evaluation of their own and

National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
	Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5  Reading for	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, cheats, and	<ol> <li>Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)</li> <li>Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.</li> <li>Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.</li> <li>Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments</li> <li>Apply ethical and legal standards in planning, using, and evaluating technology.</li> </ol>
		Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5	Applied Mathematics:  Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 2 3 organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and Information  Locating Information  Locating Information  Cobservation  Observation  Reading for  Applied  1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols,

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
2) Students shall understand the economic importance of the agricultural and natural resources sectors in Michigan, the nation, and the world. Students shall appreciate the importance of supervised experience programs in the total agricultural education program.		Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, sixtures substraction shears and	<ol> <li>Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)</li> <li>Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.</li> <li>Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.</li> <li>Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments</li> <li>Apply ethical and legal standards in planning, using, and evaluating technology.</li> </ol>
		Reading for Information	formats such as symbols, pictures, schematics, charts, and	evaluating technology.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

higan Career and Michigan Technology Content Standards  Standards
Il students will apply basic munication skills (reading, ing, speaking, and listening), y scientific and social ies concepts, perform hematical processes, and y technology in work-related attions.  Il Students will acquire, mematical processes, and y technology in work-related attions.  Il Students will acquire, mize, interpret, and evaluate remation from career reness and exploration wities, career assessment, and ac-based experiences to tify and to pursue their er goals.  Il Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)  2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.  3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.  4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments  5. Apply ethical and legal standards in planning, using, and evaluating technology.
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Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

8	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
	Program Area	Skills Level	Employability Skills Standards	Standards
4) Students shall understand the interrelationships among agriculture, natural resources, and the government, including factors that influence policy decisions. Students shall appreciate the wide variety of leadership development activities available through the National FFA Organization.		Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5  Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	<ol> <li>Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)</li> <li>Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.</li> <li>Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.</li> <li>Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments</li> <li>Apply ethical and legal standards in planning, using, and evaluating technology.</li> </ol>

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		Applied		
1) Students shall		Mathematics:	1. All students will apply basic	1. Use and transfer technological
understand growth and			communication skills (reading,	knowledge and skills for life roles
development of plants,		Applied	writing, speaking, and listening),	(family member, citizen, worker,
including the functions of plant parts, and		Technology	apply scientific and social studies concepts, perform	consumer, lifelong learner)
reproductive systems.		Listening and	mathematical processes, and	2. Use technologies to input,
		Writing: Listening	apply technology in work-related	retrieve, organize manipulate,
		1	situations.	evaluate, and communicate
		2		information.
		3	2. All students will acquire,	
		4	organize, interpret, and evaluate	3. Apply appropriate
			information from career	technologies to critical thinking,
		Locating	awareness and exploration	creative, expression, and
		Information	activities, career assessment, and	decision-making skills.
		3	work-based experiences to	
		4	identify and to pursue their	4. Employ a systematic approach
		5	career goals.	to technological solutions by
				using resources and processes to
			3. All student will demonstrate	create, maintain, and improve
		Observation	the ability to combine ideas or	products, systems, and
		3	information in new ways, make	environments
		4	connections between seemingly	
		5	unrelated ideas, and organize	5. Apply ethical and legal
		D 1: 0	and present information in	standards in planning, using, and
		Reading for	formats such as symbols,	evaluating technology.
		Information	pictures, schematics, charts, and	

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		Applied		
2) Students will		Mathematics:	1. All students will apply basic	1. Use and transfer technological
understand the role of soil			communication skills (reading,	knowledge and skills for life roles
in plant production		Applied	writing, speaking, and listening),	(family member, citizen, worker,
including factors which affect soil productivity.		Technology	apply scientific and social studies concepts, perform	consumer, lifelong learner)
uncer son productivity.		Listening and	mathematical processes, and	2. Use technologies to input,
		Writing: Listening	apply technology in work-related	retrieve, organize manipulate,
		1	situations.	evaluate, and communicate
		2		information.
		3	2. All students will acquire,	
		4	organize, interpret, and evaluate	3. Apply appropriate
			information from career	technologies to critical thinking,
		Locating	awareness and exploration	creative, expression, and
		Information	activities, career assessment, and	decision-making skills.
		3	work-based experiences to	_
		4	identify and to pursue their	4. Employ a systematic approach
		5	career goals.	to technological solutions by
				using resources and processes to
			3. All student will demonstrate	create, maintain, and improve
		Observation	the ability to combine ideas or	products, systems, and
		3	information in new ways, make	environments
		4	connections between seemingly	
		5	unrelated ideas, and organize	5. Apply ethical and legal
			and present information in	standards in planning, using, and
		Reading for	formats such as symbols,	evaluating technology.
		Information	pictures, schematics, charts, and	

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		Applied		
3) Students shall		Mathematics:	1. All students will apply basic	1. Use and transfer technological
understand the role of		A 1' 1	communication skills (reading,	knowledge and skills for life roles
nutrients in plant growth		Applied	writing, speaking, and listening),	(family member, citizen, worker,
and development.		Technology	apply scientific and social studies concepts, perform	consumer, lifelong learner)
		Listening and	mathematical processes, and	2. Use technologies to input,
		Writing: Listening	apply technology in work-related	retrieve, organize manipulate,
		1	situations.	evaluate, and communicate
		2		information.
		3	2. All students will acquire,	
		4	organize, interpret, and evaluate	3. Apply appropriate
			information from career	technologies to critical thinking,
		Locating	awareness and exploration	creative, expression, and
		Information	activities, career assessment, and	decision-making skills.
		3	work-based experiences to	_
		4	identify and to pursue their	4. Employ a systematic approach
		5	career goals.	to technological solutions by
				using resources and processes to
			3. All student will demonstrate	create, maintain, and improve
		Observation	the ability to combine ideas or	products, systems, and
		3	information in new ways, make	environments
		4	connections between seemingly	
		5	unrelated ideas, and organize	5. Apply ethical and legal
			and present information in	standards in planning, using, and
		Reading for	formats such as symbols,	evaluating technology.
		Information	pictures, schematics, charts, and	

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		Applied		
4) Students shall		Mathematics:	1. All students will apply basic	1. Use and transfer technological
understand the biology of			communication skills (reading,	knowledge and skills for life roles
pests and their impact on		Applied	writing, speaking, and listening),	(family member, citizen, worker,
agriculture with special		Technology	apply scientific and social	consumer, lifelong learner)
reference to socio-		T :-4:	studies concepts, perform	2. Has tools also is a to is not
economic and		Listening and	mathematical processes, and	2. Use technologies to input,
environmentally sound		Writing: Listening	apply technology in work-related situations.	retrieve, organize manipulate, evaluate, and communicate
pest management.		$\begin{bmatrix} 1 \\ 2 \end{bmatrix}$	situations.	information.
		$\begin{bmatrix} 2 \\ 3 \end{bmatrix}$	2. All students will acquire,	illiorillation.
		4	organize, interpret, and evaluate	3. Apply appropriate
		'	information from career	technologies to critical thinking,
		Locating	awareness and exploration	creative, expression, and
		Information	activities, career assessment, and	decision-making skills.
		3	work-based experiences to	S
		4	identify and to pursue their	4. Employ a systematic approach
		5	career goals.	to technological solutions by
				using resources and processes to
			3. All student will demonstrate	create, maintain, and improve
		Observation	the ability to combine ideas or	products, systems, and
		3	information in new ways, make	environments
		4	connections between seemingly	
		5	unrelated ideas, and organize	5. Apply ethical and legal
		D 1: 0	and present information in	standards in planning, using, and
		Reading for	formats such as symbols,	evaluating technology.
		Information	pictures, schematics, charts, and	

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
5 G. 1		Applied		
5) Students shall understand the concept of		Mathematics:	1. All students will apply basic communication skills (reading,	1. Use and transfer technological knowledge and skills for life roles
land measurement and		Applied	writing, speaking, and listening),	(family member, citizen, worker,
land descriptions.		Technology	apply scientific and social studies concepts, perform	consumer, lifelong learner)
		Listening and	mathematical processes, and	2. Use technologies to input,
		Writing: Listening	apply technology in work-related	retrieve, organize manipulate,
		1	situations.	evaluate, and communicate
		2		information.
		3	2. All students will acquire,	
		4	organize, interpret, and evaluate	3. Apply appropriate
			information from career	technologies to critical thinking,
		Locating	awareness and exploration	creative, expression, and
		Information	activities, career assessment, and	decision-making skills.
		3	work-based experiences to	4.5.1
		4	identify and to pursue their	4. Employ a systematic approach
		5	career goals.	to technological solutions by
			3. All student will demonstrate	using resources and processes to create, maintain, and improve
		Observation	the ability to combine ideas or	products, systems, and
		3	information in new ways, make	environments
		4	connections between seemingly	Cityitoimicitto
		5	unrelated ideas, and organize	5. Apply ethical and legal
			and present information in	standards in planning, using, and
		Reading for	formats such as symbols,	evaluating technology.
		Information	pictures, schematics, charts, and	2 23

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

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			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		Applied		
6) Students shall examine		Mathematics:	1. All students will apply basic	1. Use and transfer technological
and assess careers in the		A 1: 1	communication skills (reading,	knowledge and skills for life roles
plant science field.		Applied	writing, speaking, and listening),	(family member, citizen, worker,
		Technology	apply scientific and social studies concepts, perform	consumer, lifelong learner)
		Listening and	mathematical processes, and	2. Use technologies to input,
		Writing: Listening	apply technology in work-related	retrieve, organize manipulate,
		1	situations.	evaluate, and communicate
		2		information.
		3	2. All students will acquire,	
		4	organize, interpret, and evaluate	3. Apply appropriate
			information from career	technologies to critical thinking,
		Locating	awareness and exploration	creative, expression, and
		Information	activities, career assessment, and	decision-making skills.
		3	work-based experiences to	
		4	identify and to pursue their	4. Employ a systematic approach
		5	career goals.	to technological solutions by
				using resources and processes to
			3. All student will demonstrate	create, maintain, and improve
		Observation	the ability to combine ideas or	products, systems, and
		3	information in new ways, make	environments
		4	connections between seemingly	
		5	unrelated ideas, and organize	5. Apply ethical and legal
			and present information in	standards in planning, using, and
		Reading for	formats such as symbols,	evaluating technology.
		Information	pictures, schematics, charts, and	

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Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
1) Students shall understand classification, natural selection, and the role of domestic animals in agriculture and their importance in the food production chain.		Applied Mathematics:  Applied Technology  Listening and Writing: Listening	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.	<ol> <li>Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)</li> <li>Use technologies to input, retrieve, organize manipulate, evaluate, and communicate</li> </ol>
		1		information.
		2	2. All students will acquire,	
		3 4	organize, interpret, and evaluate information from career awareness and exploration	3. Apply appropriate technologies to critical thinking, creative, expression, and
		Locating Information	activities, career assessment, and work-based experiences to	decision-making skills.
		3 4 5	identify and to pursue their career goals.	4. Employ a systematic approach to technological solutions by using resources and processes to
			3. All student will demonstrate	create, maintain, and improve
		Observation 3	the ability to combine ideas or	products, systems, and environments
		3 4	information in new ways, make connections between seemingly	environments
		5	unrelated ideas, and organize and present information in	5. Apply ethical and legal standards in planning, using, and
		Reading for Information	formats such as symbols, pictures, schematics, charts, and	evaluating technology.

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		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

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8	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
	Program Area	Skills Level	Employability Skills Standards	Standards
2) Students will develop a basic understanding of the structure, function, and maintenance of the major animal body systems and their components using examples drawn from humans as well as animals of economic importance.		Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5  Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	<ol> <li>Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)</li> <li>Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.</li> <li>Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.</li> <li>Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments</li> <li>Apply ethical and legal standards in planning, using, and evaluating technology.</li> </ol>

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		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

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Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
3) Students will develop a basic understanding of the genetics, breeding parturition, and animal behaviors.		Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5  Reading for	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols,	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)  2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.  3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.  4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments  5. Apply ethical and legal standards in planning, using, and evaluating technology.
		Information	pictures, schematics, charts, and	

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		3 4 5 6 Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

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Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
4) Students shall develop an understanding of the factors involved in animal nutrition, animal feeding, and the basic feedstuffs available for that purpose.		Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5  Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)  2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.  3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.  4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments  5. Apply ethical and legal standards in planning, using, and evaluating technology.

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Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
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Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
5) Students shall understand the concept of animal health and become familiar with methods of identification of unhealthy animals, treatment, preventative measures, and the causal agents of common health problems in animals of economic importance.		Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5  Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)  2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.  3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.  4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments  5. Apply ethical and legal standards in planning, using, and evaluating technology.

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Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
6) Students will develop an appreciation for the factors involved in and the ability to evaluate and select livestock for specific uses.		Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5  Reading for	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols,	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)  2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.  3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.  4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments  5. Apply ethical and legal standards in planning, using, and evaluating technology.
		Information	pictures, schematics, charts, and	

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Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
7) Students will develop an appreciation for the products of Michigan's livestock industry and will have an understanding of how diverse the animal industry is.		Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5  Reading for Information	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly unrelated ideas, and organize and present information in formats such as symbols, pictures, schematics, charts, and	<ol> <li>Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)</li> <li>Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.</li> <li>Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.</li> <li>Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments</li> <li>Apply ethical and legal standards in planning, using, and evaluating technology.</li> </ol>

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Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
1) Students shall be able		Applied		
to apply basic financial		Mathematics:	1. All students will apply basic	1. Use and transfer technological
management principles to			communication skills (reading,	knowledge and skills for life roles
information entered in the		3	writing, speaking, and listening),	(family member, citizen, worker,
Michigan Record Book in		4	apply scientific and social	consumer, lifelong learner)
order to assist them in		5	studies concepts, perform	
making future decisions.		6	mathematical processes, and	2. Use technologies to input,
		7	apply technology in work-related	retrieve, organize manipulate,
			situations.	evaluate, and communicate
		Applied		information.
		Technology	2. All students will acquire,	
		T' . 1	organize, interpret, and evaluate	3. Apply appropriate
		Listening and	information from career	technologies to critical thinking,
		Writing: Listening	awareness and exploration	creative, expression, and
		$\begin{bmatrix} 1 \\ 2 \end{bmatrix}$	activities, career assessment, and work-based experiences to	decision-making skills.
		$\frac{2}{3}$	identify and to pursue their	4. Employ a systematic approach
		4	career goals.	to technological solutions by
		T	career goars.	using resources and processes to
		Locating	3. All student will demonstrate	create, maintain, and improve
		Information	the ability to combine ideas or	products, systems, and
		3	information in new ways, make	environments
		4	connections between seemingly	
		5	unrelated ideas, and organize	5. Apply ethical and legal
			and present information in	standards in planning, using, and
		Observation	formats such as symbols,	evaluating technology.
		3	pictures, schematics, charts, and	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		Reading for Information 3 4 5 6 Teamwork 3 4 5 Listening and	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.
		Writing: Writing 1 2 3 4	6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn	
			to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
2) Students shall		Applied		
understand the role of		Mathematics:	1. All students will apply basic	1. Use and transfer technological
finance and the lending			communication skills (reading,	knowledge and skills for life roles
system in the agricultural		3	writing, speaking, and listening),	(family member, citizen, worker,
industry.		4	apply scientific and social	consumer, lifelong learner)
		5	studies concepts, perform	
		6	mathematical processes, and	2. Use technologies to input,
		7	apply technology in work-related	retrieve, organize manipulate,
			situations.	evaluate, and communicate
		Applied		information.
		Technology	2. All students will acquire,	
			organize, interpret, and evaluate	3. Apply appropriate
		Listening and	information from career	technologies to critical thinking,
		Writing: Listening	awareness and exploration	creative, expression, and
		1	activities, career assessment, and	decision-making skills.
		2	work-based experiences to	
		3	identify and to pursue their	4. Employ a systematic approach
		4	career goals.	to technological solutions by
				using resources and processes to
		Locating	3. All student will demonstrate	create, maintain, and improve
		Information	the ability to combine ideas or	products, systems, and
		3	information in new ways, make	environments
		4	connections between seemingly	
		5	unrelated ideas, and organize	5. Apply ethical and legal
			and present information in	standards in planning, using, and
		Observation	formats such as symbols,	evaluating technology.
		3	pictures, schematics, charts, and	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		Reading for Information 3 4 5 6 Teamwork 3 4 5 Listening and	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.
		Writing: Writing 1 2 3 4	6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn	
			to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
3) Students shall		Applied		
understand the basic		Mathematics:	1. All students will apply basic	1. Use and transfer technological
functions of the marketing			communication skills (reading,	knowledge and skills for life roles
process in agriculture.		3	writing, speaking, and listening),	(family member, citizen, worker,
		4	apply scientific and social	consumer, lifelong learner)
		5	studies concepts, perform	
		6	mathematical processes, and	2. Use technologies to input,
		7	apply technology in work-related	retrieve, organize manipulate,
		A 11 1	situations.	evaluate, and communicate
		Applied	2 411 4 1 4 311	information.
		Technology	2. All students will acquire,	2 Annie annomiata
		Tistoniu a on d	organize, interpret, and evaluate information from career	3. Apply appropriate
		Listening and		technologies to critical thinking,
		Writing: Listening	awareness and exploration activities, career assessment, and	creative, expression, and decision-making skills.
		$\begin{bmatrix} 1 \\ 2 \end{bmatrix}$	work-based experiences to	decision-making skins.
		$\begin{bmatrix} 2 \\ 3 \end{bmatrix}$	identify and to pursue their	4. Employ a systematic approach
		4	career goals.	to technological solutions by
		7	career goals.	using resources and processes to
		Locating	3. All student will demonstrate	create, maintain, and improve
		Information	the ability to combine ideas or	products, systems, and
		3	information in new ways, make	environments
		4	connections between seemingly	
		5	unrelated ideas, and organize	5. Apply ethical and legal
			and present information in	standards in planning, using, and
		Observation	formats such as symbols,	evaluating technology.
		3	pictures, schematics, charts, and	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
		Reading for Information 3 4 5 6 Teamwork 3 4 5 Listening and	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.
		Writing: Writing 1 2 3 4	6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn	
			to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

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Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to a group process with ideas,	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
			suggestions, and efforts.  8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.  9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.  10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
5) Students shall understand the four types of business structures in agriculture.		Applied Mathematics:  Applied Technology  Listening and Writing: Listening 1 2 3 4  Locating Information 3 4 5  Observation 3 4 5	1. All students will apply basic communication skills (reading, writing, speaking, and listening), apply scientific and social studies concepts, perform mathematical processes, and apply technology in work-related situations.  2. All students will acquire, organize, interpret, and evaluate information from career awareness and exploration activities, career assessment, and work-based experiences to identify and to pursue their career goals.  3. All student will demonstrate the ability to combine ideas or information in new ways, make connections between seemingly	1. Use and transfer technological knowledge and skills for life roles (family member, citizen, worker, consumer, lifelong learner)  2. Use technologies to input, retrieve, organize manipulate, evaluate, and communicate information.  3. Apply appropriate technologies to critical thinking, creative, expression, and decision-making skills.  4. Employ a systematic approach to technological solutions by using resources and processes to create, maintain, and improve products, systems, and environments
		Reading for	unrelated ideas, and organize and present information in formats such as symbols,	5. Apply ethical and legal standards in planning, using, and evaluating technology.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		Information 3 4 5 6  Teamwork 3 4 5 Listening and Writing: Writing 1 2 3 4	pictures, schematics, charts, and graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			a group process with ideas, suggestions, and efforts.	
			8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.	
			9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.	
			10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	<b>Employability Skills Standards</b>	Standards
6) Students will gain an		Applied		
understanding of the		Mathematics:	1. All students will apply basic	1. Use and transfer technological
importance of effective			communication skills (reading,	knowledge and skills for life roles
communications and the		Applied	writing, speaking, and listening),	(family member, citizen, worker,
role that communication plays in the agriculture		Technology	apply scientific and social studies concepts, perform	consumer, lifelong learner)
and natural resources		Listening and	mathematical processes, and	2. Use technologies to input,
industries.		Writing: Listening	apply technology in work-related	retrieve, organize manipulate,
		1	situations.	evaluate, and communicate
		2		information.
		3	2. All students will acquire,	
		4	organize, interpret, and evaluate	3. Apply appropriate
			information from career	technologies to critical thinking,
		Locating	awareness and exploration	creative, expression, and
		Information	activities, career assessment, and	decision-making skills.
		3	work-based experiences to	
		4	identify and to pursue their	4. Employ a systematic approach
		5	career goals.	to technological solutions by
		01	2 411 4 1 4 211 1	using resources and processes to
		Observation	3. All student will demonstrate	create, maintain, and improve
		3	the ability to combine ideas or	products, systems, and
		4	information in new ways, make	environments
		5	connections between seemingly	5 Apply athiogland local
			unrelated ideas, and organize and present information in	5. Apply ethical and legal standards in planning, using, and
		Reading for		
		Reading for	formats such as symbols,	evaluating technology.

Program Content	National Standards for	Work Keys	Michigan Career and	Michigan Technology Content
Standards	Program Area	Skills Level	Employability Skills Standards	Standards
		Information 3 4 5 6  Teamwork 3 4 5  Listening and Writing: Writing 1 2 3 4	pictures, schematics, charts, and graphs.  4. All students will make decisions and solve problems by specifying goals, identifying resources and constraints, generating alternatives, considering impact, choosing appropriate alternatives, implementing plans of action and evaluating results.  5. All students will display personal qualities such as responsibility, self-management, self-confidence, ethical behavior, and respect for self and others.  6. All students will identify organize, plan, and allocate resources (such as time, money, material, and human resources) efficiently and effectively.  7. All students will work cooperatively with people of diverse backgrounds and abilities, identify with the group's goals and values, learn to exercise leadership, tech others new skills, serve clients or customers, and will contribute to	6. Evaluate the societal and environmental impacts of technology and forecast alternative uses and possible consequences to make informed civic, social, and economic decisions.

Program Content Standards	National Standards for Program Area	Work Keys Skills Level	Michigan Career and Employability Skills Standards	Michigan Technology Content Standards
			a group process with ideas, suggestions, and efforts.	
			8. All students will communicate ideas to support a position and negotiate to resolve divergent interests.	
			9. All students will learn to understand, monitor, and improve complex systems, including social, technical, and mechanical systems, and work with and maintain a variety of technologies.	
			10. All students will integrate employability skills into behaviors, which prepare one for obtaining, maintaining, advancing, and changing employment.	